

What is claimed:

1. A suspension for a vehicle comprising:  
a frame;  
a releasable locking assembly comprising:  
a first assembly movably coupled to the frame;  
a second assembly movably coupled to the frame;  
wherein movement of the frame relative to the first and second assemblies causes the first and second assemblies to engage each other to limit further movement of the frame in at least a first direction.
2. The suspension of claim 1 wherein the first assembly is pivotably coupled to the frame.
3. The suspension of claim 1 wherein the second assembly is pivotably coupled to the frame.
4. The suspension of claim 1 wherein the first assembly comprises a first undulating portion.
5. The suspension of claim 4 wherein the second assembly comprises a second undulating portion.
6. The suspension of claim 4 wherein the first undulating portion comprises a toothed surface.
7. The suspension of claim 5 wherein the second undulating portion comprises a toothed surface.
8. The suspension of claim 4 wherein the toothed surface comprises a stepped surface.

9. The suspension of claim 5 wherein the toothed surface comprises a stepped surface.

10. The suspension of claim 1 further comprising a caster coupled to the second assembly.

11. The suspension of claim 1 wherein the second assembly comprises a first portion and a second portion and a resilient member between the first and second portions.

12. The suspension of claim 11 wherein the first portion and the second portion are coupled to the frame at a first location.

13. The suspension of claim 11 wherein the first portion is coupled to the frame at a first location and the second portion is coupled to the frame at a second location.

14. The suspension of claim 11 wherein the first portion is pivotably coupled to the frame at a first location and the second portion is pivotably coupled to the frame at a second location.

15. The suspension of claim 1 wherein the first assembly's moveably coupling to the frame comprises a mounting to a pivot arm movably coupled to the frame.

16. The suspension of claim 1 wherein movement of the frame in a first direction is limited by engagement of the first and second assemblies and wherein movement in a second direction is not limited by engagement of the first and second assemblies.

17. The suspension of claim 1 wherein pivotal movement of the second assembly causes the second assembly to come into engagement with the first assembly to limit the movement of the first assembly.

18. A suspension for a vehicle comprising:

a frame;

a locking assembly comprising:

a first member coupled to the frame, the first member having a first undulating portion;

a second member coupled to the frame, the second member having a second undulating portion; and

wherein movement of the frame relative to the first and second members causes the first and second members to physically engage each other to limit further movement of the frame in at least a first direction.

19. The suspension of claim 18 wherein the first undulating portion comprises a toothed surface.

20. The suspension of claim 19 wherein the second undulating portion comprises a toothed surface.

21. The suspension of claim 18 wherein the first undulating portion comprises a stepped surface.

22. The suspension of claim 19 wherein the second undulating portion comprises a stepped surface.

23. The suspension of claim 18 wherein movement of the frame relative to the first and second members causes the first and second undulating portions to engage each other to limit further movement of the frame in at least a first direction.

24. A suspension for a vehicle comprising:

a frame;

at least one pivot arm coupled to the frame; the pivot arm comprising a caster assembly coupled thereto;

a first member coupled to the pivot arm;

a second member movably coupled to the frame; and

wherein movement of the frame relative to the first and second members causes the first and second members to physically engage each other to limit further movement of the frame in at least a first direction.

25. The suspension of claim 24 wherein the second member is pivotably coupled to the frame.

26. The suspension of claim 24 wherein the first assembly comprises a first undulating portion.

27. The suspension of claim 26 wherein the second assembly comprises a second undulating portion.

28. The suspension of claim 26 wherein the first undulating portion comprises a toothed surface.

29. The suspension of claim 27 wherein the second undulating portion comprises a toothed surface.

30. The suspension of claim 26 wherein the undulating surface comprises a stepped surface.

31. The suspension of claim 27 wherein the undulating surface comprises a stepped surface.

32. The suspension of claim 24 further comprising a caster coupled to the second assembly.

33. The suspension of claim 24 wherein the second member comprises a first portion and a second portion and a resilient member between the first and second portions.

34. The suspension of claim 33 wherein the first portion and the second portion are coupled to the frame at a first location.

35. The suspension of claim 33 wherein the first portion is coupled to the frame at a first location and the second portion is coupled to the frame at a second location.

36. The suspension of claim 33 wherein the first portion is pivotably coupled to the frame at a first location and the second portion is pivotably coupled to the frame at a second location.

37. The suspension of claim 24 wherein movement of the frame in a first direction is limited by engagement of the first and second members and wherein movement in a second direction is not limited by engagement of the first and second members.

38. The suspension of claim 24 wherein pivotal movement of the second member causes the second member to come into engagement with the first member to limit the movement of the first assembly.

39. A suspension for a vehicle comprising:

a frame;

at least one pivot arm coupled to the frame; the pivot arm comprising a caster assembly coupled thereto;

a first assembly coupled to the pivot arm;

a second assembly pivotably coupled to the frame; and

wherein movement of the frame causes the second assembly to exhibit pivotal motion so as to engage the first assembly to limit further movement of the frame in at least a first direction.

40. The suspension of claim 39 wherein the first assembly comprises a first undulating portion.

41. The suspension of claim 40 wherein the second assembly comprises a second undulating portion.

42. The suspension of claim 40 wherein the first undulating portion comprises a toothed surface.

43. The suspension of claim 41 wherein the second undulating portion comprises a toothed surface.

44. The suspension of claim 40 wherein the undulating surface comprises a stepped surface.

45. The suspension of claim 41 wherein the undulating surface comprises a stepped surface.

46. The suspension of claim 39 further comprising a caster coupled to the second assembly.

47. The suspension of claim 39 wherein the second assembly comprises a first portion and a second portion and a resilient member between the first and second portions.

48. The suspension of claim 47 wherein the first portion and the second portion are coupled to the frame at a first location.

49. The suspension of claim 47 wherein the first portion is coupled to the frame at a first location and the second portion is coupled to the frame at a second location.

50. The suspension of claim 47 wherein the first portion is pivotably coupled to the frame at a first location and the second portion is pivotably coupled to the frame at a second location.

51. The suspension of claim 39 wherein movement of the frame in a first direction is limited by engagement of the first and second assemblies and wherein movement in a second direction is not limited by engagement of the first and second assemblies.

52. The suspension of claim 39 wherein pivotal movement of the second assembly causes the second assembly to come into

engagement with the first member to limit the movement of the first assembly.

53. A suspension for a vehicle comprising:

- a frame;

- at least one pivot arm coupled to the frame; the pivot arm comprising a first caster assembly coupled thereto;

- a first assembly coupled to the pivot arm;

- a second assembly pivotably coupled to the frame, the second assembly comprising a second caster assembly coupled thereto; and

- wherein movement of the frame causes the second assembly to exhibit pivotal motion so as to engage the first assembly to limit any further movement of the frame.

54. A suspension for a vehicle comprising:

- a frame;

- at least one pivot arm coupled to the frame;

- at least one front caster coupled to the pivot arm;

- at least one drive wheel coupled to the pivot arm;

- a first assembly coupled to the pivot arm, the first assembly comprising a substantially vertically oriented first undulating surface;

- a second assembly pivotably coupled to the frame, the second assembly comprising a substantially vertically oriented second undulating surface disposed laterally proximate the first undulating surface; and

- at least one rear caster coupled to the second assembly.

55. The suspension of claim 54 wherein movement of the frame causes the second assembly to exhibit pivotal motion



so as to engage the first assembly to limit any further movement of the frame.

56. The suspension of claim 54 wherein movement of the frame causes the second undulating surface to exhibit pivotal motion so as to engage the first undulating surface to limit any further movement of the frame.

57. The suspension of claim 54 wherein the first or second undulating surfaces comprise a toothed surface.

58. The suspension of claim 54 wherein the first or second undulating surfaces comprises a stepped surface.

59. The suspension of claim 54 wherein the second assembly comprises a first portion and a second portion and a resilient member between the first and second portions.

60. The suspension of claim 59 wherein the first portion and the second portion are coupled to the frame at a first location.

61. The suspension of claim 59 wherein the first portion is coupled to the frame at a first location and the second portion is coupled to the frame at a second location.

62. The suspension of claim 59 wherein the first portion is pivotably coupled to the frame at a first location and the second portion is pivotably coupled to the frame at a second location.

63. The suspension of claim 54 wherein movement of the frame in a first direction is limited by engagement of the first and second assemblies and wherein movement in a second direction is not limited by engagement of the first and second assemblies.

64. An assembly for releasably locking a vehicle suspension comprising:

    a first assembly movably coupled to a frame of the vehicle;

    a second assembly movably coupled to the frame; and

    wherein movement of the frame relative to the first and second assemblies causes the first and second assemblies to engage each other to limit any further movement of the frame.

65. The assembly of claim 64 wherein the first assembly is pivotably coupled to the frame.

66. The assembly of claim 64 wherein the second assembly is pivotably coupled to the frame.

67. The assembly of claim 64 wherein the first assembly comprises a first undulating portion.

68. The assembly of claim 67 wherein the second assembly comprises a second undulating portion.

69. The assembly of claim 67 wherein the first undulating portion comprises a toothed surface.

70. The assembly of claim 68 wherein the second undulating portion comprises a toothed surface.

71. The assembly of claim 67 wherein the undulating portion comprises a stepped surface.

72. The assembly of claim 68 wherein the undulating portion comprises a stepped surface.

73. The assembly of claim 64 wherein the second assembly comprises a first portion and a second portion and a resilient member between the first and second portions.

74. The assembly of claim 73 wherein the first portion and the second portion are coupled to the frame at a first location.

75. The assembly of claim 73 wherein the first portion is coupled to the frame at a first location and the second portion is coupled to the frame at a second location.

76. The assembly of claim 73 wherein the first portion is pivotably coupled to the frame at a first location and the second portion is pivotably coupled to the frame at a second location.

77. The assembly of claim 64 wherein the first assembly's moveably coupling to the frame comprises a mounting to a pivot arm movably coupled to the frame.

78. The assembly of claim 64 wherein movement of the frame in a first direction is limited by engagement of the first

and second assemblies and wherein movement in a second direction is not limited by engagement of the first and second assemblies.

79. The assembly of claim 64 wherein pivotal movement of the second assembly causes the second assembly to come into engagement with the first assembly to limit the movement of the first assembly.

80. An assembly for releasably locking a vehicle suspension comprising:

- a first means for locking;

- a second means for locking;

- a means for moveably mounting the first and second means for locking to a vehicle frame; and

wherein movement of the frame relative to the first and second means for locking causes the first and second means for locking to come into inter-engagement with each other to restrict any further movement of the frame in at least a first direction.